

What is claimed is:

1 1. A method of automatically refreshing previously recorded data on a
2 recordable storage medium during playback of the previously recorded data from the
3 recordable storage medium comprising the steps of:

4 reading a segment of the previously recorded data from the recordable
5 storage medium; and,

6 re-writing at least a portion of the segment of the previously recorded data
7 back onto the recordable storage medium.

1 2. The method according to claim 1, wherein the previously recorded data is
2 refreshed within a data retention period.

51 3. The method according to claim 1, wherein the portion of the segment of
52 the previously recorded data that is re-written to the recordable storage medium
53 corresponds to the segment of the previously recorded data that was read from the
54 recordable storage medium.

51 4. The method according to claim 3, wherein the segment of recorded data
52 read from the recordable storage medium and the portion of the segment of the
53 recorded data that is re-written onto the recordable storage medium is at least one error
54 correction coding (ECC) block.

1 5. The method according to claim 1, wherein the data previously recorded
2 onto the recordable storage medium produces a maximum bitstream rate during the
3 playback of the previously recorded data and the combined rate of said reading and said
4 re-writing steps is at least twice that of the maximum bitstream rate.

1 6. The method according to claim 5, wherein the rate of said reading step is
2 substantially equal to the rate of said re-writing step.

1 7. The method according to claim 1, wherein said reading step further
2 comprises the step of reading the segment of the previously recorded data from the
3 recordable storage medium at an original location and said re-writing step further
4 comprises the step of re-writing at least a portion of the segment of the previously
5 recorded data back onto the recordable storage medium at the original location.

1 8. The method according to claim 7, wherein the portion of the segment of
2 the previously recorded data re-written back onto the recordable storage medium is re-
3 written at a new location on the recordable storage medium.

1 9. The method according to claim 1, further comprising the step of providing
2 a recordable storage medium device to perform said reading and re-writing steps,
3 wherein said reading and re-writing steps are performed while the recordable storage
4 medium device is not in a user initiated mode.

1 10. The method according to claim 1, further comprising the step of selectively
2 examining the segment of the previously recorded data by searching for errors in the
3 segment of previously recorded data, wherein said re-writing step is performed only if
4 the level of errors in the segment of previously recorded data reaches a predetermined
5 level.

1 11. A method of automatically refreshing data recorded on a recordable
2 storage medium during playback of the recorded data comprising the steps of:
3 creating a file directory for listing when at least one segment of the data
4 was recorded on the recordable storage medium;
5 reading the segment of the recorded data from the recordable storage
6 medium; and,
7 when said reading step occurs after a predetermined elapsed time from
8 said creating step re-writing at least a portion of the segment of the recorded data on the
9 recordable storage medium.

1 12. The method according to claim 11, wherein the predetermined elapsed
2 time occurs within a data retention period.

1 13. A method of automatically refreshing data recorded onto a recordable
2 storage medium during playback of the recorded data comprising the steps of:
3 reading a segment of the previously recorded data from the recordable
4 storage medium;
5 jumping back to re-read the segment if the number of errors in the
6 segment reaches a first predetermined level; and,
7 re-writing at least a portion of the segment of the previously recorded data
8 back onto the recordable storage medium if the number of jump-backs reaches a
9 second predetermined number.

1 14. A system for automatically refreshing previously recorded data on a
2 recordable storage medium during playback of the previously recorded data from the
3 recordable storage medium comprising:
4 a microprocessor; and
5 a controller, wherein the controller:
6 reads a segment of the previously recorded data from the
7 recordable storage medium; and,
8 re-writes at least a portion of the segment of the previously
9 recorded data back onto the recordable storage medium, as instructed by the
10 microprocessor.

1 15. The system according to claim 14, wherein the previously recorded data is
2 refreshed within a data retention period.

1 16. The system according to claim 14, wherein the portion of the segment of
2 the previously recorded data that is re-written to the recordable storage medium by the
3 controller corresponds to the segment of the previously recorded data that was read
4 from the recordable storage medium by the controller.

1 17. The system according to claim 16, wherein the segment of recorded data
2 read from the recordable storage medium by the controller and the portion of the
3 segment of the recorded data that is re-written onto the recordable storage medium by
4 the controller is at least one ECC block.

1 18. The system according to claim 14, wherein the data previously recorded
2 onto the recordable storage medium by the controller produces a maximum bitstream
3 rate as the controller reads the previously recorded data during playback of the
4 previously recorded data and the combined rate of the reading and the re-writing steps
5 is at least twice that of the maximum bitstream rate.

1 19. The system according to 18, wherein the rate of the reading step is
2 substantially equal to the rate of the re-writing step.

1 20. The system according to claim 14, wherein the controller further reads the
2 segment of the previously recorded data from the recordable storage medium at an
3 original location and re-writes at least a portion of the segment of the previously
4 recorded data back onto the recordable storage medium at the original location.

1 21. The system according to claim 20, wherein the portion of the segment of
2 the previously recorded data re-written back onto the recordable storage medium by the
3 controller is re-written at a new location on the recordable storage medium by the
4 controller.

1 22. The system according to claim 14, wherein the controller and the
2 microprocessor are contained within a recordable storage medium device and the
3 controller performs the reading and re-writing steps while the recordable storage
4 medium device is not in a user initiated mode.

1 23. The system according to claim 14, wherein the controller selectively
2 examines the segment of the previously recorded data by searching for errors in the
3 segment of previously recorded data, wherein the microprocessor instructs the controller
4 to perform the re-writing step only if the level of errors in the segment of previously
5 recorded data reaches a predetermined level.

1 24. A system for automatically refreshing data recorded onto a recordable
2 storage medium during playback of the recorded data comprising:
3 a microprocessor for creating a file directory listing a creation date of at
4 least one segment of the data recorded onto the recordable storage medium;
5 a controller, wherein the controller:
6 reads the segment of the recorded data from the recordable
7 storage medium; and
8 re-writes at least a portion of the segment of the recorded data onto
9 the recordable storage medium, responsive to the microprocessor, wherein said reading
10 and re-writing steps occur at a predetermined time within a data retention period relative
11 to the creation date stored in the file directory.

1 25. A system for automatically refreshing data recorded onto a recordable
2 storage medium during playback of the recorded data, comprising:
3 a microprocessor; and
4 a controller, wherein the controller:
5 reads a segment of the previously recorded data from the
6 recordable storage medium; and responsive to a number of errors in the segment
7 reaching a first predetermined number causes a jump back to re-read the segment; and,
8 responsive to a number of jump-backs equaling a second
9 predetermined number the microprocessor initiates a re-write of at least a portion of the
10 segment of the previously recorded data onto the recordable storage medium.

1 26. A method of automatically refreshing data recorded on a plurality of
2 recordable storage media comprising the steps of:
3 selecting one of said recordable storage media;
4 reading a file directory with information representative of a record creation
5 date for at least one segment of the data recorded on said selected recordable storage
6 medium;
7 re-writing at least a portion of the segment of the recorded data on the
8 recordable storage medium if a predetermined time has elapsed from said record
9 creation date represented by said information within said file directory; and,
10 repeating said selecting reading and rewriting steps for remaining ones of
11 said plurality of recordable storage media.

1 27. A method of claim 26, comprising a further step of:
2 repeating said selecting reading rewriting and repeating steps
3 periodically.